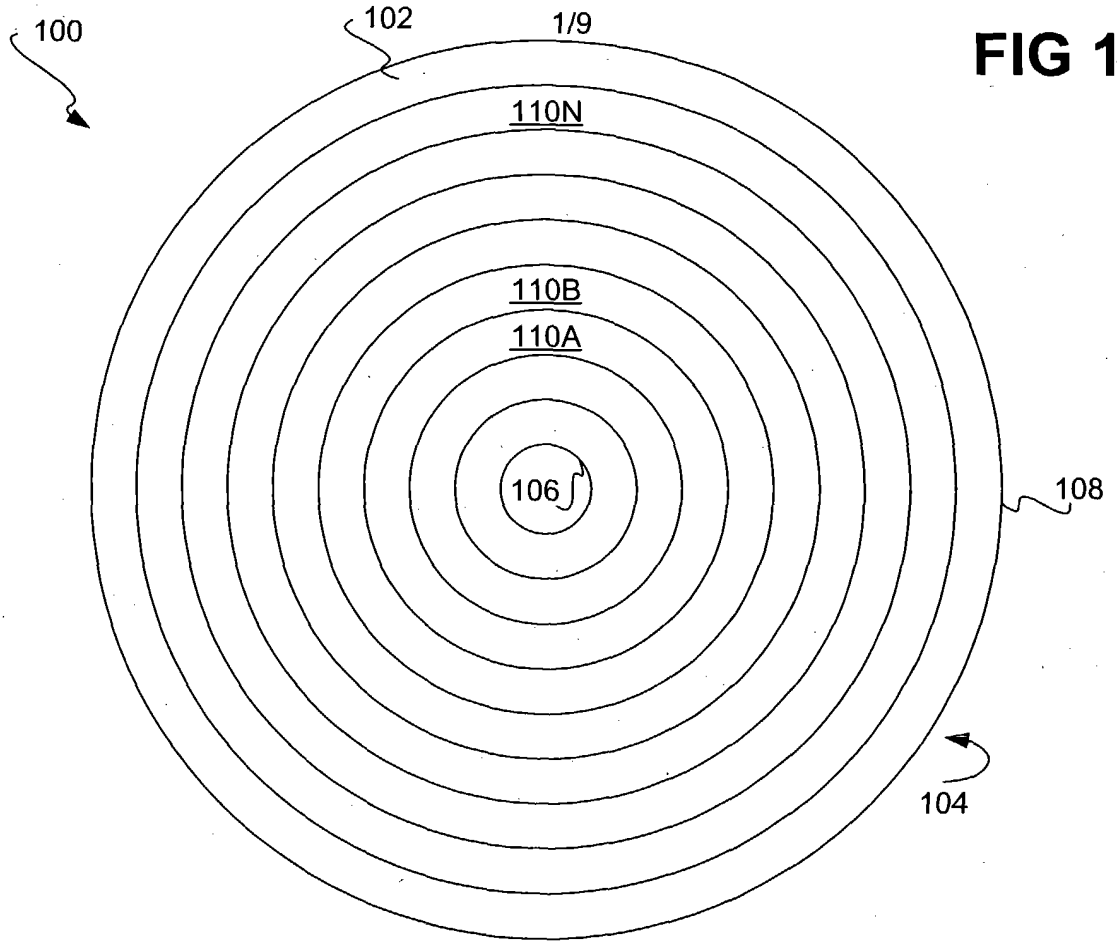

100
102
1/9
110N
110B
110A
106
108
104

FIG 1

FIG 2

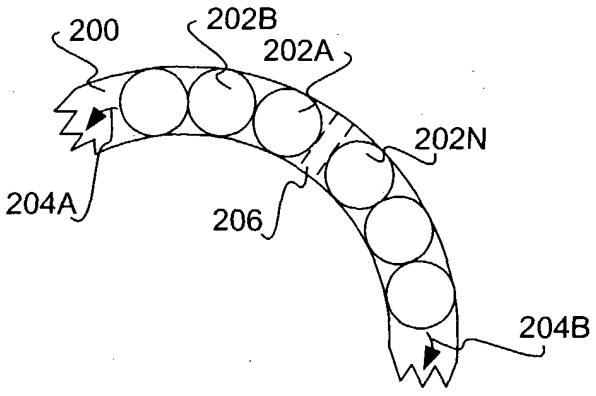

200
202B
202A
202N
204A
206
204B

FIG 3

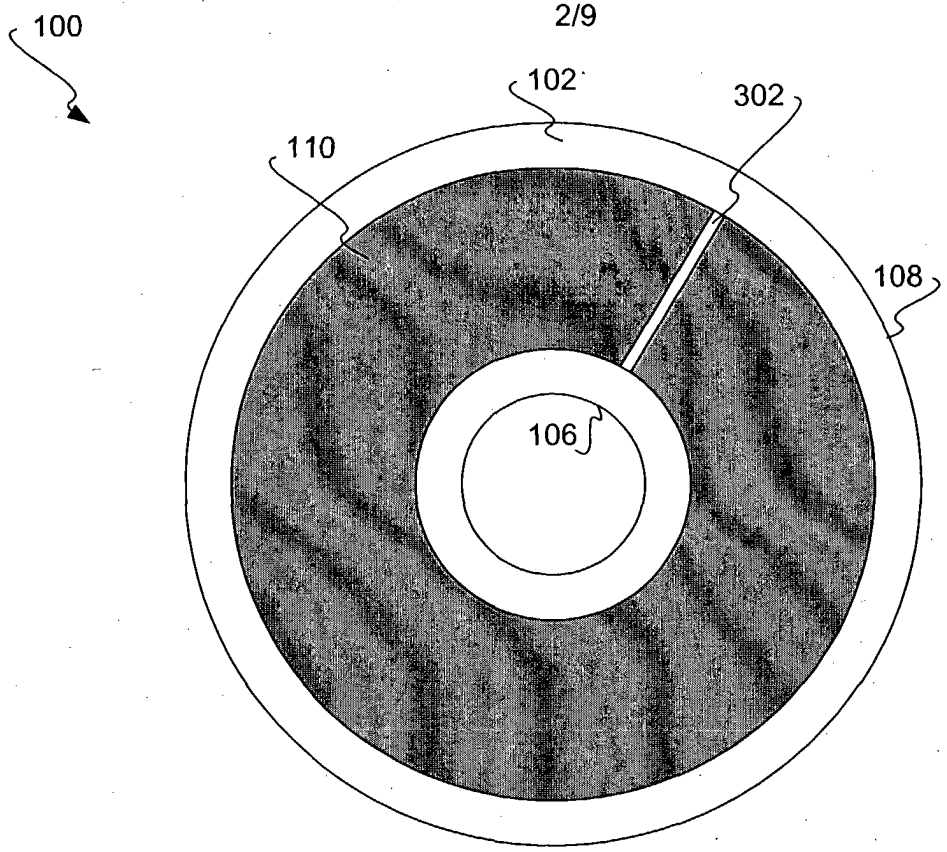


FIG 4

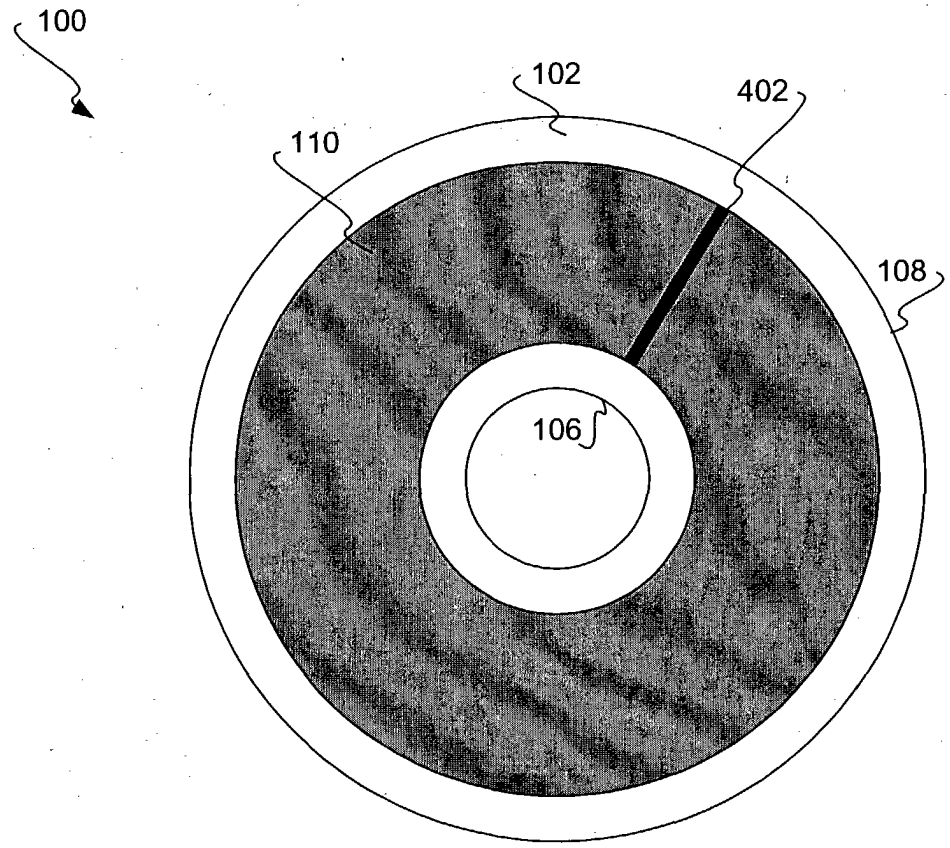


FIG 5

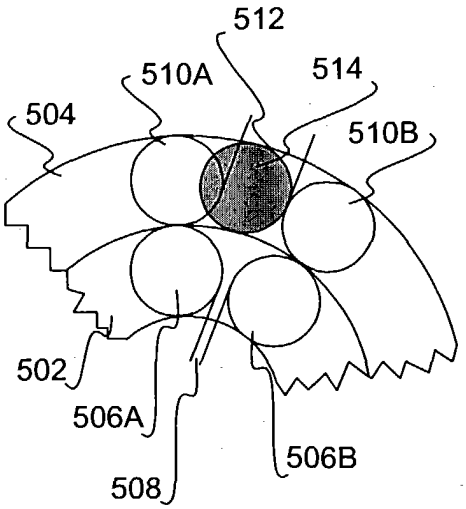


FIG 6

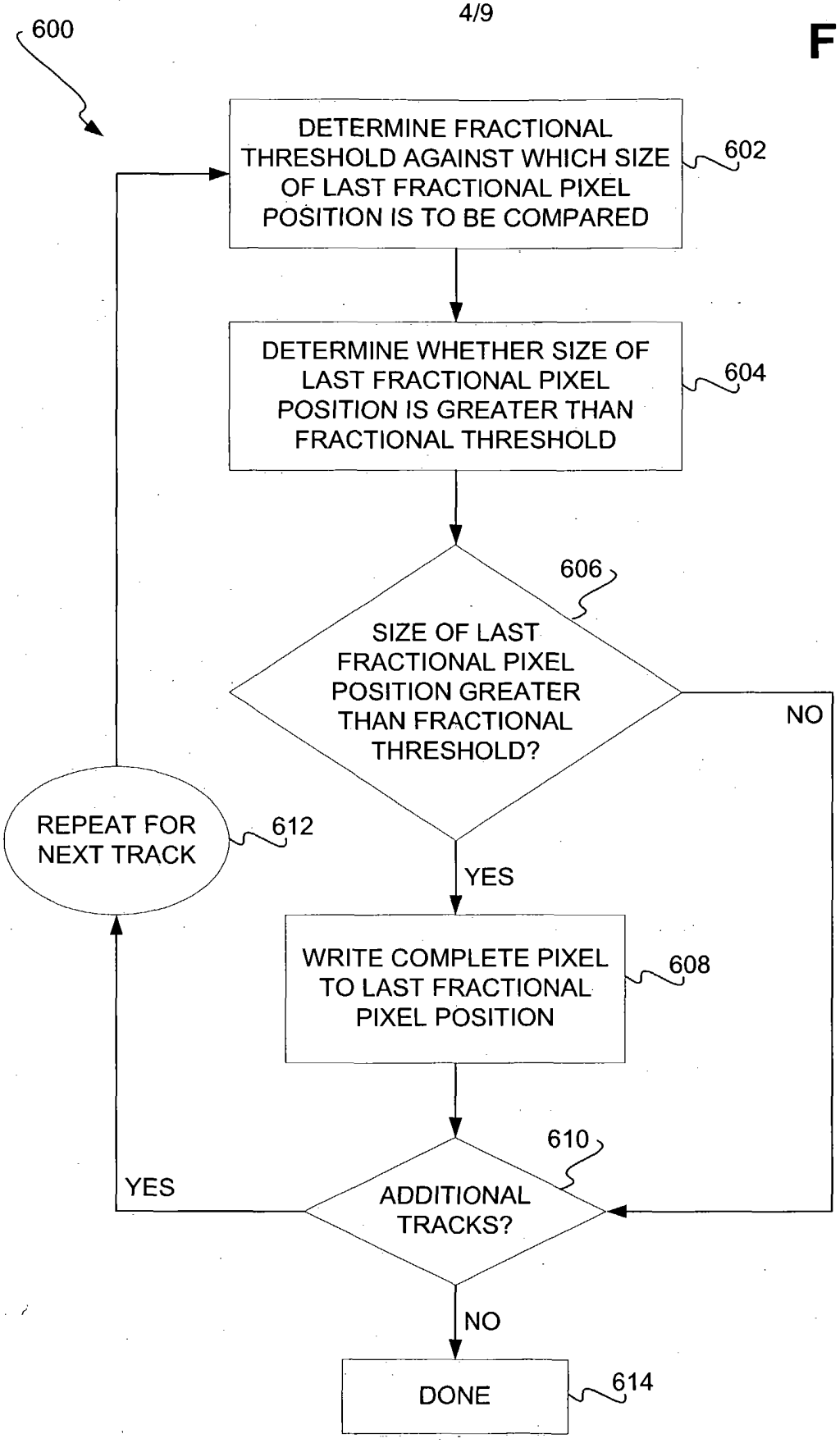

600
DETERMINE FRACTIONAL THRESHOLD AGAINST WHICH SIZE OF LAST FRACTIONAL PIXEL POSITION IS TO BE COMPARED
602
DETERMINE WHETHER SIZE OF LAST FRACTIONAL PIXEL POSITION IS GREATER THAN FRACTIONAL THRESHOLD
604
606
SIZE OF LAST FRACTIONAL PIXEL POSITION GREATER THAN FRACTIONAL THRESHOLD?
NO
YES
REPEAT FOR NEXT TRACK
612
WRITE COMPLETE PIXEL TO LAST FRACTIONAL PIXEL POSITION
608
610
ADDITIONAL TRACKS?
YES
NO
DONE
614

FIG 7

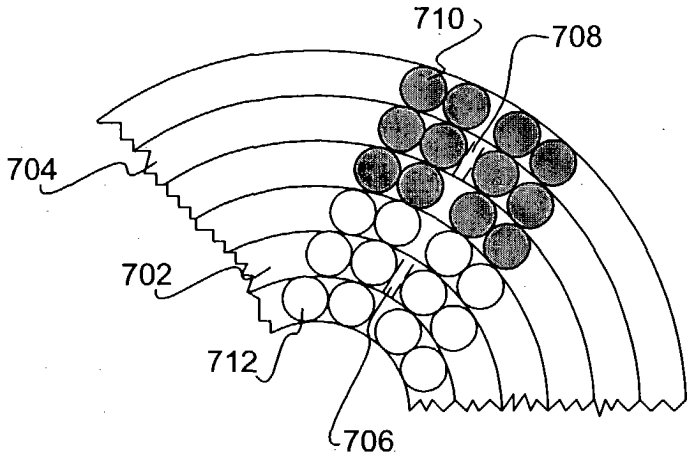

710
708
704
702
712
706

FIG 8

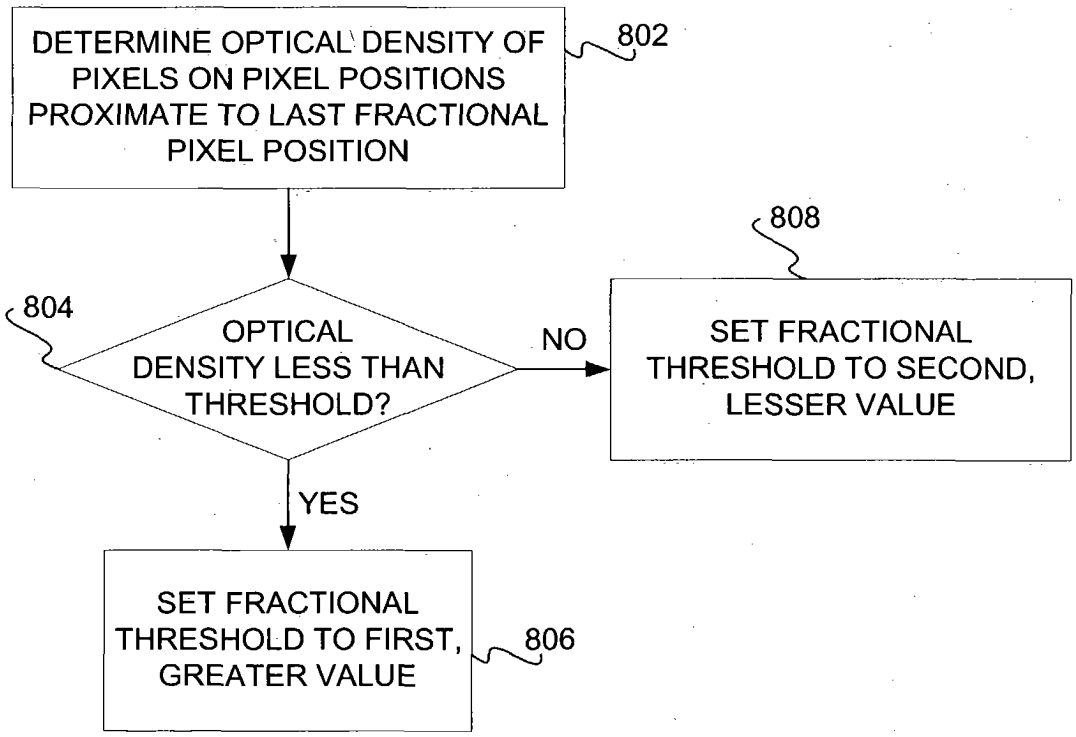

DETERMINE OPTICAL DENSITY OF PIXELS ON PIXEL POSITIONS PROXIMATE TO LAST FRACTIONAL PIXEL POSITION
802
808
804
OPTICAL DENSITY LESS THAN THRESHOLD?
NO
SET FRACTIONAL THRESHOLD TO SECOND, LESSER VALUE
YES
SET FRACTIONAL THRESHOLD TO FIRST, GREATER VALUE
806

FIG 9A

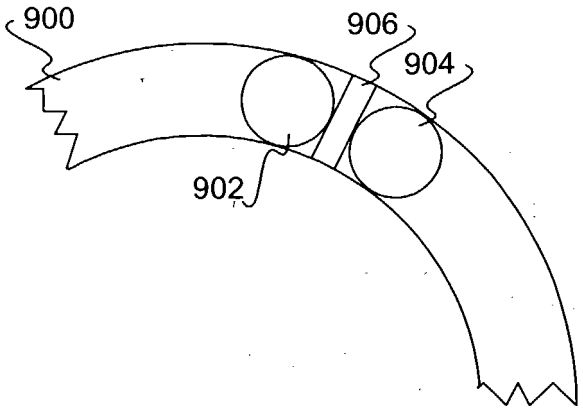


FIG 9B

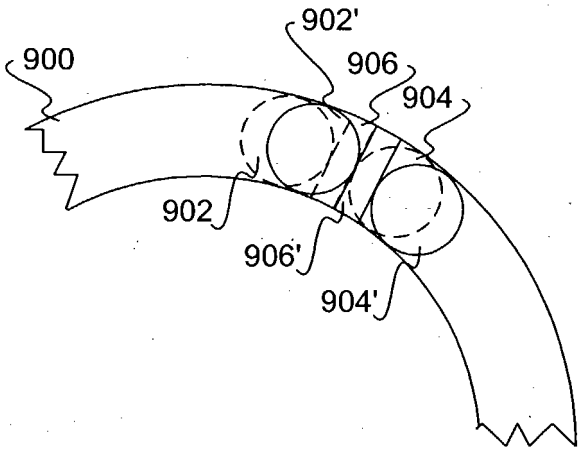


FIG 9C

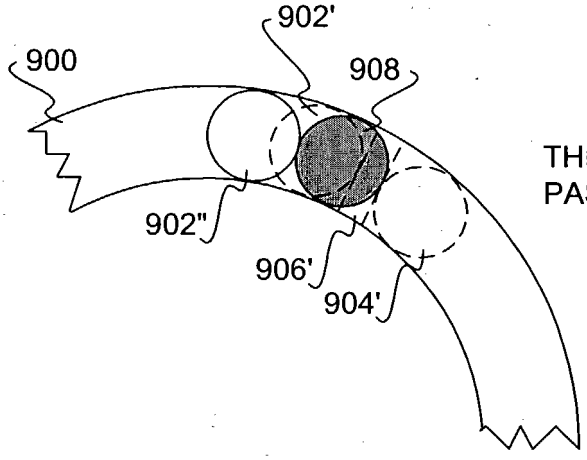


FIG 10

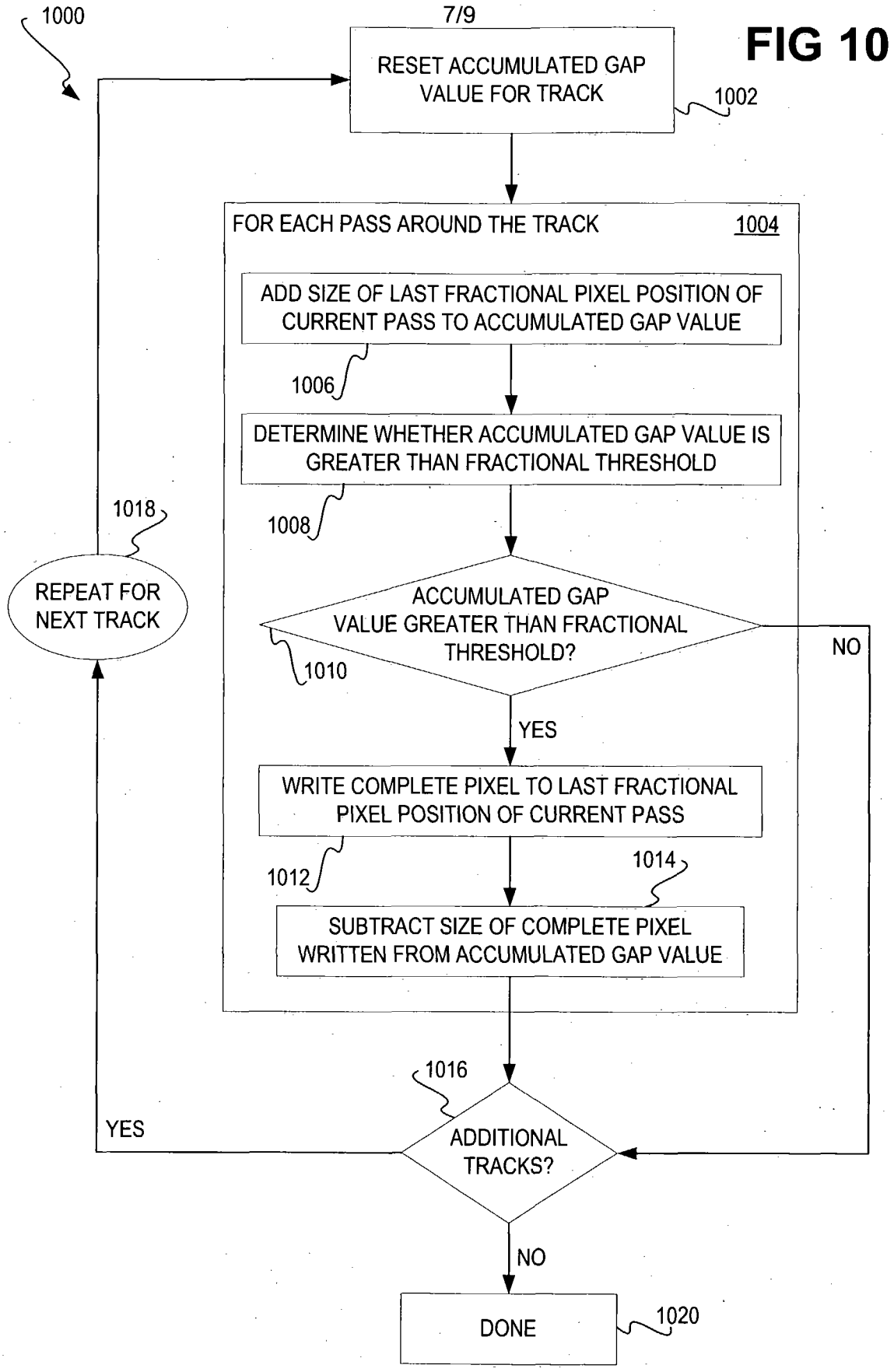

1000
RESET ACCUMULATED GAP VALUE FOR TRACK
1002
FOR EACH PASS AROUND THE TRACK
1004
ADD SIZE OF LAST FRACTIONAL PIXEL POSITION OF CURRENT PASS TO ACCUMULATED GAP VALUE
1006
DETERMINE WHETHER ACCUMULATED GAP VALUE IS GREATER THAN FRACTIONAL THRESHOLD
1008
ACCUMULATED GAP VALUE GREATER THAN FRACTIONAL THRESHOLD?
1010
NO
YES
WRITE COMPLETE PIXEL TO LAST FRACTIONAL PIXEL POSITION OF CURRENT PASS
1012
1014
SUBTRACT SIZE OF COMPLETE PIXEL WRITTEN FROM ACCUMULATED GAP VALUE
1016
ADDITIONAL TRACKS?
YES
NO
1018
REPEAT FOR NEXT TRACK
DONE
1020

FIG 11

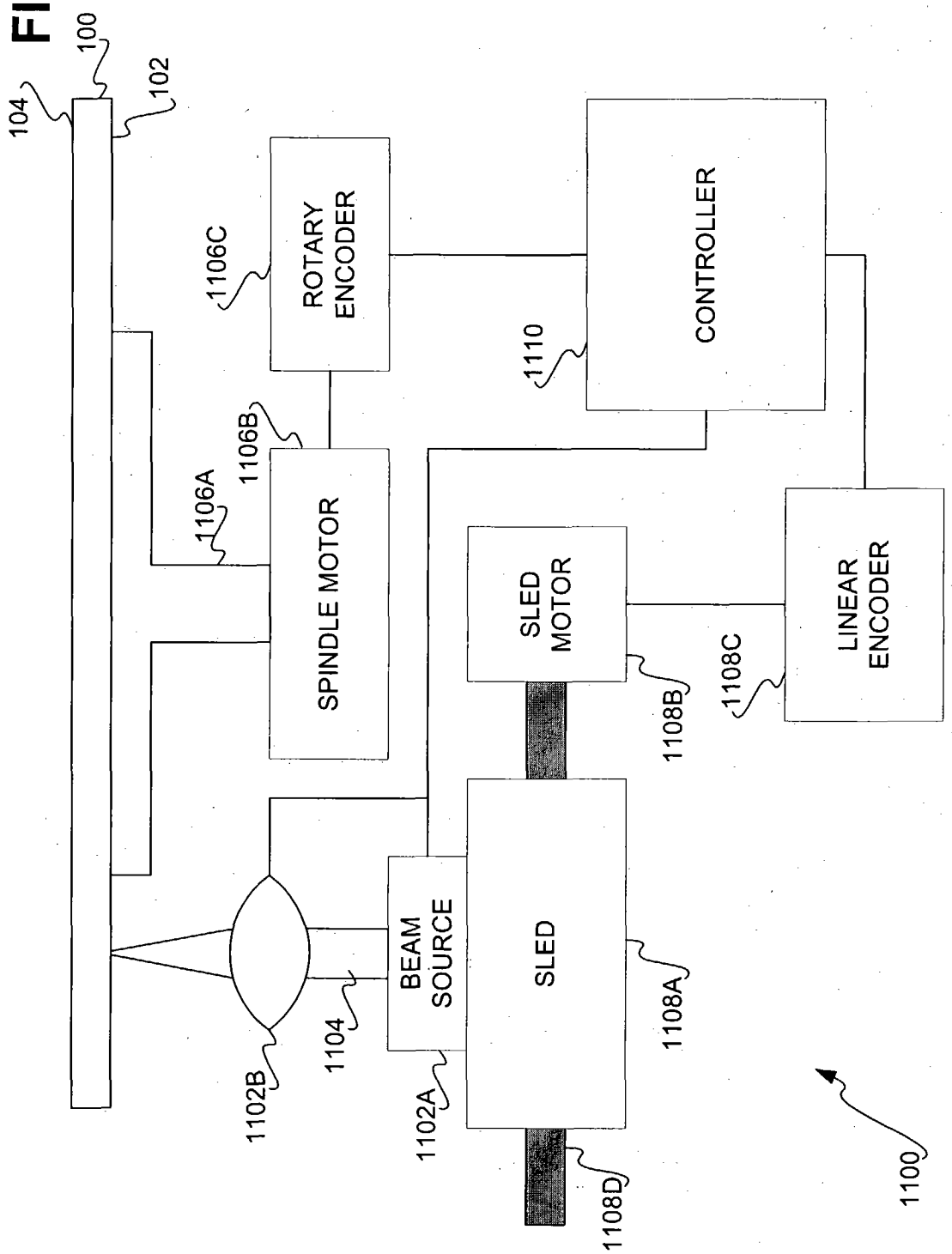
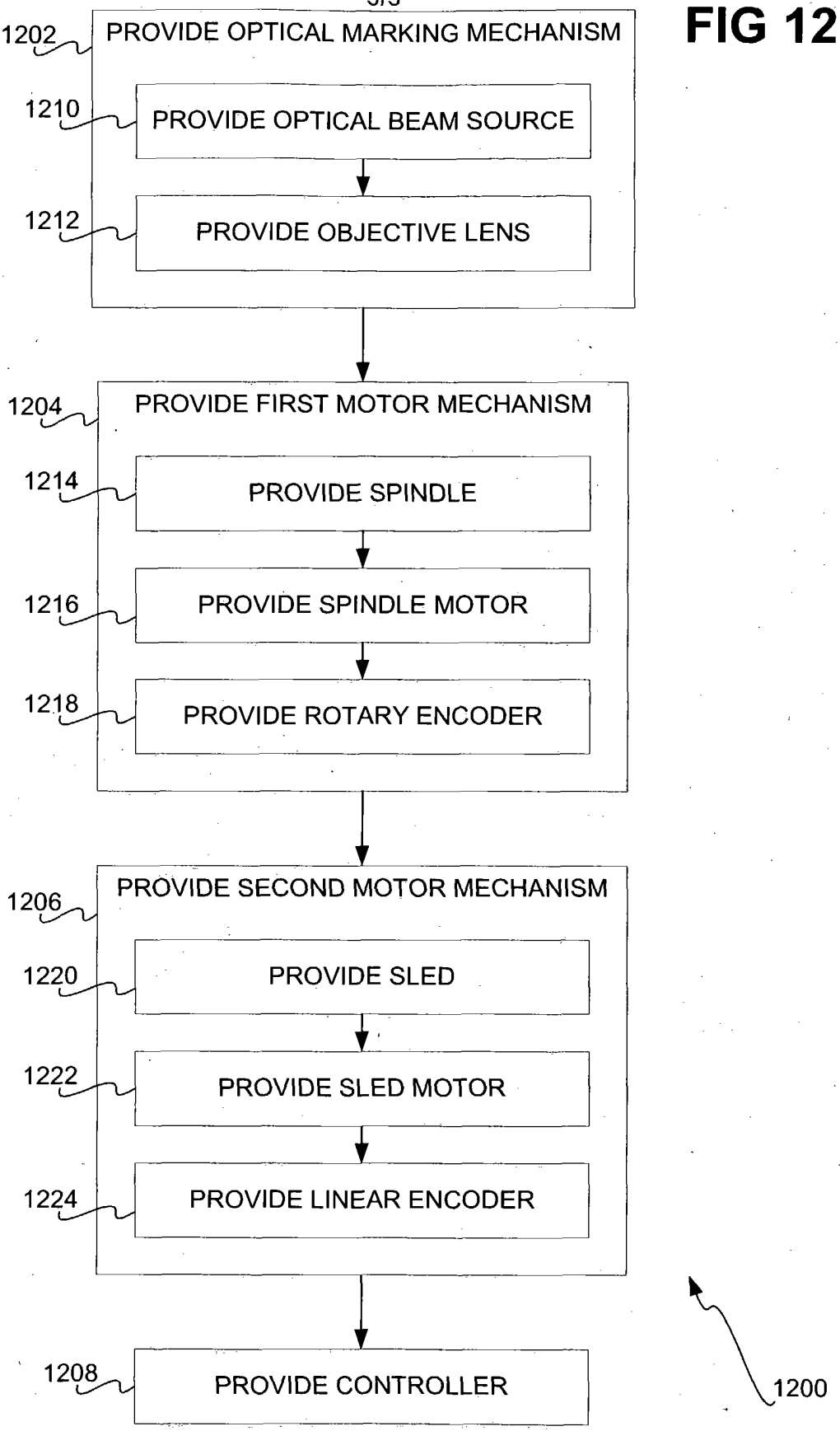

100
102
104
ROTARY ENCODER
1106C
CONTROLLER
1110
1106B
1106A
SPINDLE MOTOR
SLED MOTOR
LINEAR ENCODER
1108C
1108B
BEAM SOURCE
SLED
1108A
1104
1102B
1102A
1108D
1100

FIG 12


1202
PROVIDE OPTICAL MARKING MECHANISM
1210
PROVIDE OPTICAL BEAM SOURCE
1212
PROVIDE OBJECTIVE LENS
1204
PROVIDE FIRST MOTOR MECHANISM
1214
PROVIDE SPINDLE
1216
PROVIDE SPINDLE MOTOR
1218
PROVIDE ROTARY ENCODER
1206
PROVIDE SECOND MOTOR MECHANISM
1220
PROVIDE SLED
1222
PROVIDE SLED MOTOR
1224
PROVIDE LINEAR ENCODER
1208
PROVIDE CONTROLLER
1200